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Notice of Allowability	Application No.	Applicant(s)	
	10/735,045	MAST ET AL.	
	Examiner	Art Unit	
	Jaworski Francis J.	3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--
 All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to IDS 7/30/04; 8/30/04.
 2. ☒ The allowed claim(s) is/are 1-21.
 3. ☒ The drawings filed on 12 December 2003 are accepted by the Examiner.
 4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.

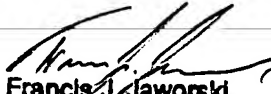
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>073004,083004</u> 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____. |
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Francis J. Jaworski
 Primary Examiner

EXAMINER'S AMENDMENT

The status of the parent application has been updated by the insertion:

In the specification page 2 line 2 after " May 22, 2002 " has been added -- and now abandoned --.

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance:

Ying et al (5657760) is directed to the use of ultrasound Doppler quadrature phase vector analysis to determine hyperthermia damage zones, see col. 16 line 26-Col. 17 line 37.

Kuth et al (US5944663, of record with the 8/30/04 IDS) teaches ultrasound imaging before and after heating below the thermal damage threshold to assess the vulnerable region prior to actual treatment.

Lizzi et al (US6488626) is directed to application of tissue strain induction force with ultrasound frame measurement of induced displacements as a temperature monitoring technique during therapeutic hyperthermia, see col. 3 lines 47-58, col. 6 lines 9 – 45 and col. 7 lines 13-24.

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Suzuki et al (US5553618) is directed to ultrasound speed change for hot spot determination in conjunction with MRI during hyperthermic treatment, col. 23 lines 20-34.

Tu et al (US6113593) teaches the use of tissue force measurement in conjunction with temperature measurement during ablation to provide thermal controls, col. 6 lines 38-58.

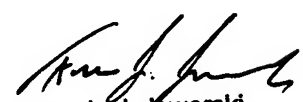
None of the prior art alone or in combination teaches or suggests a method for pulse-echo ultrasound anatomic tissue temperature rise mapping including inter alia the production of complex analytic signals from first and second imaging signals with computing of depth-dependent delay from the conjugate product of the first and second analytic signals together with creation of an image showing such temperature rise and or in conjunction with intermediate frame averaging or conjugate product averaging

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication should be directed to Jaworski Francis J. at telephone number 571-272-4738

FJJ:fjj

04012005


Francis J. Jaworski
Primary Examiner